

being complementary to the single nucleotide of the polymorphic site of said polymorphism;

- D²
cont
- (C) determining the identity of said single nucleotide of said single nucleotide polymorphism by determining the identity of the dideoxynucleotide derivative incorporated into said primer, said identified dideoxynucleotide derivative being complementary to said single nucleotide of said polymorphism;
 - (D) comparing the identity of said single nucleotide of said single nucleotide polymorphism with a corresponding single nucleotide polymorphism of a reference human, and determining whether said single nucleotide polymorphisms contain the same single nucleotide at their respective polymorphic sites; and
 - (E) using said comparison to determine whether said target human possesses said genetic trait. --

REMARKS

I. Status of the Application

Claims 30-38 and 40-46 were pending, claims 30-32, 40-41 and 45-46 have been canceled, without prejudice or disclaimer, and new claims 47-49 has been added. Therefore, claims 33-38, 42-44 and 47-49 are pending.

As the Examiner will appreciate the chemical polyoxyethylenesorbitan-20 is commonly referred to by the trademark -- Tween-20 --. In view of the Examiner's objection and in the interests of furthering the prosecution of this application, Applicants have amended the specification to refer to the trademark Tween-20 by its chemical name - polyoxyethylenesorbitan-20 -.

Support for new claims 47 and 49 may be found in claims 30 and 31, and at other sites of the specification. Support for the "150 base" recitation of claims 48 and 49 may be found at page 14, lines 13-17. Support for the amendments to claims 33-34 may be found throughout the specification.

II. Rejection under 35 U.S.C. § 103

In the Advisory Action, dated March 17, 1997, the Examiner maintained his rejection under 35 U.S.C. § 103 "for reasons of record," referring to his prior rejection, in

the Final Office Action dated December 17, 1996, of claims 31, 33-38, 40, 41, and 45-46 under 35 U.S.C. § 103(a) as being unpatentable over Goelet *et al.* The Applicants respectfully traverse the Examiner's rejection and request reconsideration.

The Applicants respectfully submit that the present claims fully address the Examiner's concerns with respect to the cited Goelet *et al.* reference. The present claims are drawn, in part, to analyzing the DNA of a target human by identifying at least two single nucleotide polymorphisms present on a DNA molecule. The identification of more than one polymorphism is not obvious in view the cited Goelet *et al.* reference in that the presently claimed invention provides a wealth of information concerning the target human that would not be ascertainable by the Goelet *et al.* method, e.g., polygenetic diseases, paternity and identity. In other words, although Goelet *et al.* teaches a method for sequencing alleles of a gene, Goelet *et al.* does not teach or suggest that one could identify multiple single nucleotide polymorphisms on a target molecule and thereby use that information to analyze a genome for complex physiological traits (such as the presence or likelihood of developing polygenetic diseases, or for identity or parentage information).

In addition, the Applicants respectfully submit that the new claims 47-49, place the present application in condition for Allowance and present no new issues that will require further consideration and/or search. The Applicants respectfully submit that a person of ordinary skill in the art would not have considered the subject matter claimed in claims 47-49 to be obvious in view of Goelet *et al.* As the Examiner will appreciate, although Goelet *et al.* teaches the ability to sequence alleles of genes, Goelet *et al.* does not teach one of ordinary skill in the art that single nucleotide polymorphisms are, on average, located within about 150 bases of a genetic trait and that such polymorphisms could thus be used to determine whether a human individual possesses a genetic trait.

For the reasons stated above, the Applicants respectfully submit that the present invention is novel over the cited Goelet *et al.* reference. Accordingly, the Examiner's rejection should be withdrawn.

III. Rejection Under 35 U.S.C. § 112, First Paragraph

The Examiner has rejected claims 42-44 under 35 U.S.C. § 112, first paragraph out of a concern that these claims contain subject matter not described in the specification in such a way as to enable one skilled in the art to make and/or use the invention. Although the Examiner may be correct that single nucleotide polymorphisms in a horse are not directly correlative with human single nucleotide polymorphisms, the

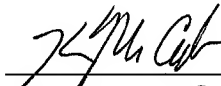
Applicants respectfully reassert that the recitation "equine polymorphism" in claim 42, line 4 is merely a typographical error. Rather, the recitation "equine polymorphism" was intended to be "human polymorphism".

Additionally, as the Examiner will note, the specification provides multiple detailed examples concerning the identification and analysis of equine single nucleotide polymorphisms. The specification further provides in Example 6 that "human single nucleotide polymorphisms may be used in the same manner as the above-described equine polymorphisms." See page 58, lines 6-7. Therefore, in view of the detailed examples provided throughout the specification, the Applicants respectfully submit that the specification reasonably conveys to those of ordinary skill in the art, in such full, clear, concise and exact terms, the requisite description of the claimed invention pursuant to 35 U.S.C. § 112, first paragraph as to enable those of ordinary skill in the art how to make and use the present invention. In view of Applicants amendments and remarks, it is respectfully submitted that the Examiner's rejection under 35 U.S.C. § 112, first paragraph should be withdrawn.

Applicants respectfully submit that the neither the present amendment nor the previously submitted amendment introduce New Matter and thus should be entered. Applicants further submit that the application, as amended, is in condition for allowance and earnestly solicit early notification of such favorable action.

Respectfully submitted,

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